

WHAT IS CLAIMED IS:

1. A facing material comprising a flame resistive fiber and a filler, wherein a waterproofing layer is formed by impregnating said flame resistive fiber with said filler, a flame resistive layer is made of said flame resistive fiber not impregnated with the filler, and said flame resistive layer is located in a surface of said facing material.

10 2. The facing material according to claim 1, wherein said filler is a thermoplastic resin.

15 3. The facing material according to claim 1, wherein said waterproofing layer and said flame resistive layer are flexible.

4. The facing material according to claim 1, wherein a water-absorption preventing layer is provided on a surface of said flame resistive layer.

20 5. The facing material according to claim 4, wherein said water-absorption preventing layer is provided at least in a peripheral portion of the surface of said flame resistive layer.

25 6. The facing material according to claim 4, wherein when partially overlapping a plurality of said

facing material, an area of said water-absorption preventing layer is equal to or smaller than of an area of an unexposed region, where the unexposed region is a region of the surface of said facing material exposed to outside and an exposed region is a region of the surface said facing material not exposed to outside.

7. The facing material according to claim 6, wherein said water-absorption preventing layer is provided in an overlapped region of the surface of said flame resistive layer.

8. The facing material according to claim 6, wherein said water-absorption preventing layer is provided in a position distant from said unexposed region viewing from a surface side of said water-absorption preventing layer.

9. The facing material according to claim 4, wherein said water-absorption preventing layer is formed by impregnating the filler in said flame resistive layer.

10. The facing material according to claim 6, wherein said unexposed region has a fixing assistant means.

11. The facing material according to claim 10,
wherein said fixing assistant means is a metal plate or
a metal foil.

5 12. The facing material according to claim 6,
wherein at least a part of the surface of said
waterproofing layer side in said unexposed region has
an adhesion means.

10 13. The facing material according to claim 6,
wherein at least a part of the surface of said flame
resistive layer side in said unexposed region has an
adhesion means.

15 14. The facing material according to claim 1,
wherein the surface of said water proofing layer side
has a surface protective layer.

20 15. The facing material according to claim 14,
wherein said surface protective layer has a surface
protective film.

25 16. The facing material according to claim 14,
wherein said surface protective layer has a metal plate
or metal foil.

17. The facing material according to claim 16,

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wherein said metal plate or said metal foil is sealed with the filler.

18. The facing material according to claim 6,
5 wherein the surface protective layer is provided in a region other than at least a part of said unexposed region.

19. The facing material according to claim 6,
10 wherein at least a part of the surface of said waterproofing layer side in said unexposed region has irregularities.

20. The facing material according to claim 4,
15 wherein said water-absorption preventing layer has irregularities.

21. A method of storing a facing material according to claim 1, comprising storing the facing material in a state of winding it in a longitudinal direction when it is transported or kept.
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22. A method of storing a facing material according to claim 1, comprising storing the facing material in a state of stacking it in the same direction when it is transported and kept.
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23. A manufacturing apparatus for the facing material according to claim 1, comprising a degassing means and a heating means, wherein a stacked body comprising a covering means made of flame resistive fibers and a sheet member of a thermoplastic resin is heated while degassing a space between the covering means and the sheet member to closely fix each other.

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10 24. A manufacturing apparatus for the facing material according to claim 1, comprising a pressing means and a heating means, wherein a stacked body comprising a covering means made of flame resistive fibers and a thermoplastic resin is heated and pressed to closely contact each other.

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25. A manufacturing method for the facing material according to claim 1, comprising stacking a covering means made of flame resistive fibers and a sheet member of a thermoplastic resin and heating them while degassing a space between the covering means and the sheet member to closely contact and fix each other.

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25 26. A manufacturing method for the facing material according to claim 1, comprising arranging a covering means made of flame resistive fibers and a thermoplastic resin, heating, and pressing them to closely contact and fix each other.

27. A method for installing a facing material,
comprising fixing the facing material to a roof
substrate or an external wall by a fixing member,
wherein said facing material is a facing material
5 according to claim 1.

28. A construction comprising a facing material
fixed to a roof substrate or an external wall by a
fixing member, wherein said facing material is a facing
10 material according to claim 1.

29. A photovoltaic power-generating apparatus,
comprising a solar cell module and a facing material
according to claim 1, wherein the facing material is
15 installed in a portion not provided with the solar cell
module on a plane in which the solar cell module is
installed.

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30. A solar cell module comprising a photovoltaic
20 element and a covering means arranged on a non-light-
receiving face side of the photovoltaic element and
composed of the flame resistive fiber, wherein in the
solar cell module, the surface of the non-light-
receiving face side of said solar cell module has said
25 flame resistive layer and the surface of the flame
resistive layer has the water-absorption preventing
layer.

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31. The solar cell module according to claim 30,
wherein a water-absorption preventing layer is provided
at least in a peripheral part of the surface of the
flame resistive layer.

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32. The solar cell module according to claim 30,
wherein when a plurality of solar cell modules are
partially overlapped, an area of said water-absorption
preventing layer is equal to or smaller than an
10 unexposed region, where the unexposed region is a
region of the surface of said solar cell module not
exposed to outside and an exposed region is a region of
the surface of said solar cell module exposed to
outside.

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33. The solar cell module according to claim 30,
wherein said water-absorption preventing layer is
provided in the overlapped part of the surface of said
flame resistive layer.

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34. The solar cell module according to claim 30,
wherein said water-absorption preventing layer is
provided in a position distant from said unexposed
region viewing from the light-receiving face side.

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35. The solar cell module according to claim 30,
wherein said water-absorption preventing layer is

formed by impregnating the filler in the flame resistive fiber.

36. The solar cell module according to claim 30,
5 wherein said covering means is adhered to the non-light-receiving face side of the photovoltaic element by the filler and has a layer formed by impregnating said flame resistive layer with the filler.

10 37. The solar cell module according to claim 30,
wherein the surface of the light-receiving face side of
the photovoltaic element has a surface member.

38. The solar cell module according to claim 37,
15 wherein said surface member has a surface protection
film.

39. The solar cell module according to claim 37,
wherein a part of said unexposed region has no surface
member.

40. The solar cell module according to claim 30,
wherein said unexposed region has a fixing assistant
means.

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41. The solar cell module according to claim 40,
wherein said fixing assistant means is a metal plate or

metal foil.

42. The solar cell module according to claim 30,
wherein at least a part of the light-receiving face
5 side of said unexposed region has irregularities.

43. The solar cell module according to claim 30,
wherein said water-absorption preventing layer has
irregularities.

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44. The solar cell module according to claim 32,
wherein at least a part of an overlapped region has an
adhesion means.

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45. The solar cell module according to claim 32,
wherein at least a part of the light-receiving face
side of said unexposed region or the non-light-
receiving face side of said exposed region has an
adhesion means.

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46. The solar cell module according to claim 30,
wherein said photovoltaic element is flexible.

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47. The solar cell module according to claim 30,
wherein said photovoltaic element is a photovoltaic
element of amorphous silicon formed on a stainless
steel substrate.

48. The solar cell module, according to claim 30,
further comprising an electric output line for taking
out an output of said photovoltaic element to outside
of said solar cell module, wherein the electric output
line is take out from a side part or a light-receiving
face side of said solar cell module.

49. The solar cell module according to claim 32,
wherein the solar cell module has an insulating layer
between said photovoltaic element and the covering
means in a region other than at least a part of said
unexposed region.

50. A method for storing the solar cell module
according to claim 30, comprising storing the solar
cell module in a state of winding the module in the
length direction when it is transported or kept.

51. A method for storing a solar cell module
according to claim 30, comprising storing the solar
cell module in the state of stacking the module in the
same direction when the module is transported or kept.

/ 52. A manufacturing method for a solar cell
module comprising a photovoltaic element and a covering
means arranged in a non-light-receiving face side of
the photovoltaic element and composed of a flame

resistive fiber, which comprises providing a flame
resistive layer on a surface of a non-light-receiving
face side of said solar cell module, and providing a
water-absorption preventing layer on surface of the
5 flame resistive layer.

53. The manufacturing method for the solar cell
module, according to claim 52, wherein said water-
absorption preventing layer is provided at least in a
10 peripheral part of the surface of said flame resistive
layer.

54. The manufacturing method for the solar cell
module, according to claim 52, wherein when a plurality
15 of solar cell modules are partially overlapped, an area
of said water-absorption preventing layer is equal to
or smaller than said unexposed region, where the
unexposed region is a region of the surface said solar
cell module not exposed to outside and an exposed
20 region is a region of the surface of said solar cell
module exposed to outside.

55. The manufacturing method for the solar cell
module, according to claim 54, wherein said water-
25 absorption preventing layer is provided in the
overlapped part of the surface of said flame resistive
layer.

56. The manufacturing method for the solar cell module, according to claim 54, wherein said water-absorption preventing layer is provided in a position distant from said unexposed region in viewing from a
5 light-receiving face side of the photovoltaic element.

57. The manufacturing method for the solar cell module, according to claim 52, wherein said water-absorption preventing layer is formed by impregnating
10 the flame resistive fiber with the filler.

58. The manufacturing method for the solar cell module, according to claim 52, wherein said covering means is adhered to the non-light-receiving face side
15 of the photovoltaic element with the filler and the covering means has a layer impregnated with the filler.

59. The manufacturing method for the solar cell module, according to claim 52, wherein the surface of
20 the light-receiving face side of the photovoltaic element has a surface member.

60. The manufacturing method for the solar cell module, according to claim 52, wherein said surface
25 member has a surface protection film.

61. The manufacturing method for the solar cell

module, according to claim 52, wherein a part of said unexposed region has no surface member.

62. The manufacturing method for the solar cell
5 module, according to claim 54, wherein a fixing
assistant means is provided in said unexposed region.

63. The manufacturing method for the solar cell
module, according to claim 62, wherein said fixing
10 assistant means is a metal plate or metal foil.

64. The manufacturing method for the solar cell
module, according to claim 54, wherein at least a part
of the light-receiving face side of said unexposed
15 region has irregularities.

65. The manufacturing method for the solar cell
module, according to claim 54, wherein said water-
absorption preventing layer has irregularities.
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66. The manufacturing method for the solar cell
module, according to claim 54, wherein an adhesion
means is provided in at least a part of the overlapped
region.
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67. The manufacturing method for the solar cell
module, according to claim 54, wherein an adhesion

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means is provided in at least a part of the light-receiving face side of said unexposed region or at least of the non-light-receiving face side of said exposed region.

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68. The manufacturing method for the solar cell module, according to claim 52, wherein said photovoltaic element is flexible.

10 69. The manufacturing method for the solar cell module, according to claim 52, wherein said photovoltaic element is an amorphous silicon photovoltaic element formed on a stainless steel substrate.

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70. The manufacturing method for the solar cell module, according to claim 52, wherein said solar cell module has an electric output line for taking out an output of said photovoltaic element to outside of said 20 solar cell module, and the electric output line is taken out from a side part of said solar cell module.

71. The manufacturing method for the solar cell module, according to claim 52, wherein an insulating 25 layer is provided between said photovoltaic element and the covering means in a region other than at least a part of said unexposed region.

72. The manufacturing method for the solar cell module, according to claim 52, wherein a first sheet member of a thermoplastic resin, the covering means made of the flame resistive fiber, a second sheet 5 member of a thermoplastic resin, and the photovoltaic element are stacked to form a stacked body and said stacked body is heated while degassing to closely contact and fix it.

10 73. The manufacturing method for the solar cell module, according to claim 52, wherein a first sheet member of a thermoplastic resin, the covering means made of the flame resistive fiber, another sheet member 15 of a thermoplastic resin, and the photovoltaic element are stacked to form a stacked body and said stacked body is heated and pressed to closely contact and fix it.

20 74. A solar cell module manufacturing apparatus for manufacturing the solar cell module according to claim 30 by the manufacturing method according to claim 52.

25 75. An installing method for a solar cell module, comprising fixing the solar cell module to a roof substrate or an external wall by a fixing member, wherein said solar cell module is the solar cell module

according to claim 30.

76. A construction comprising a solar cell module, in which the solar cell module is fixed to a trestle, a roof substrate, or an external wall by a fixing member, wherein said solar cell module is the solar cell module according to claim 30.

77. A photovoltaic power-generating apparatus comprising the solar cell module according to claim 30 and a power conversion apparatus.

78. A solar cell module comprising a photovoltaic element sealed with a filler, wherein a covering means comprising a layer made of a flame resistive fiber having flame resistive performance is provided on a non-light-receiving face side of said photovoltaic element.

79. The solar cell module according to claim 78, wherein said covering means is adhered to the non-light-receiving face side of said photovoltaic element with a filler and has a layer formed by impregnating a filler in the covering means.

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80. The solar cell module according to claim 78, wherein said covering means is a carbon fiber.

81. The solar cell module according to claim 78,
wherein said covering means is a mesh.

82. The solar cell module according to claim 78,
5 wherein said covering means is a flame resistive fiber
obtained from a special acrylic fiber.

83. The solar cell module according to claim 78,
wherein said covering means is a felt textile.

10 84. The solar cell module according to claim 78,
wherein an insulation film is put between said covering
means and said photovoltaic element.

15 85. The solar cell module according to claim 78,
wherein said photovoltaic element and an enclosure of
the light-receiving face side of said photovoltaic
element are flexible.

20 86. The solar cell module according to claim 78,
wherein said photovoltaic element is an amorphous
silicon photovoltaic element formed on a stainless
steel substrate.

25 87. A manufacturing method for solar cell module,
comprising stacking a covering means composed of a
flame resistive fiber, a sheet member of a

thermoplastic resin, and a photovoltaic element and
heating while degassing portions between the covering
means and the sheet member of the thermoplastic resin
and between the sheet member of the thermoplastic resin
5 and the photovoltaic element to closely contact each
other and fix them.

88. A manufacturing method for solar cell module,
comprising applying either one of an adhesive material
10 or a sticky material to a covering means composed of a
flame resistive fiber, stacking the applied covering
means and a photovoltaic element, and pressing a
portion between the covering means and the photovoltaic
element to closely contact each other and fix them.

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89. A manufacturing apparatus for solar cell
module, comprising a degassing means and a heating
means, wherein a covering means composed of a flame
resistive fiber, a sheet member of a thermoplastic
20 resin, and a photovoltaic element are stacked and
heated while degassing portions between the covering
means and the sheet member of the thermoplastic resin
and between the sheet member of the thermoplastic resin
and the photovoltaic element.

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90. A manufacturing apparatus for solar cell
module, comprising means of applying at least one of an

adhesive material or a sticky material, a covering means composed of a flame resistive fiber and a heating means, wherein the photovoltaic element and the covering means are stacked, and a portion between the 5 covering means and the photovoltaic element is pressed to closely contact each other and fix them.

91. The installing method for solar cell module, comprising fixing the solar cell module according to 10 claim 78 to a trestle, a roof substrate, or an external wall with a fixing member.

92. A construction comprising the solar cell module according to claim 78 fixed to a roof substrate 15 or an external wall with a fixing member.

93. A photovoltaic power-generating apparatus comprising the solar cell module according to claim 78 and a power conversion apparatus.

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94. The solar cell module according to claim 78, wherein a weight of said flame resistive fiber is equal to or more than 100 g/m².